COMMUNITY CORRELATES OF CRIME AND LAW ENFORCEMENT ACTIVITIES IN NORTHWESTERN NORTH CAROLINA

by

Joyce W. Hodge

Approved by

Marvin K. Hoffman 8/17/72
Chairman, Thesis Committee

Albert Hyden 8/17/72
Associate Professor of Political Science

Kirkley D. Moore Jr. 8/17/72
Professor of Political Science

Kirkley D. Moore Jr. 8/17/72
Chairman, Department of Political Science

Curtis Williams 8-17-72
Dean of the Graduate School

ABSTRACT

Community Correlates of Crime and Law Enforcement Activities in Northwestern North Carolina

This study focuses upon selected areas within North Carolina in an attempt to establish the relationship between various community characteristics, data on the area law enforcement planning regions in the state. The two regions were also compared to determine the regional differences in these relationships.

The propositions examined in this study were derived from previous research. It was hypothesized that a positive relationship would be found between the degree of urbanization of a community and higher crime rates. A similar hypothesis was also tested purporting that communities experiencing a higher percentage of population change would have higher crime rates. Racial differences in criminal activity were also tested in that communities with larger nonwhite populations were expected to experience higher crime rates.

To test these hypotheses, contingency tables relating the independent socio-economic variables and the dependent arrest variables were constructed. Yule's Q, a one-way measure of association, was used to test the relationships.

It was found that as urbanization increases, there is a concomitant increase in adult crime rates. However, the

data in this study did not support the hypothesis that population change is positively associated with rises in crime rates. Instead, it was found that an inverse relationship existed between population change and three of the four types of crime examined. A weak positive relationship was found between higher nonwhite population and increases in adult crime rates, and a strong inverse relationship between juvenile misdemeanor rates and nonwhite population was observed.

A comparison of the two regions found that they respond differently to certain environmental factors. These variables are: total population, population change, per cent of nonwhite population, and police expenditure.

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by

Joyce W. Hodge

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A major problem currently facing society is the extent to which it is plagued by criminal activity. In North Carolina, as in the rest of the nation, there is evidence that criminal activity is on the increase. Federal criminal statistics indicate that while major crime increased 176% over the past decade, North Carolina, during this same period experienced a 268% increase in major crimes. This study focuses upon selected areas within the state and attempts to establish the relationships between various community characteristics, data on the area law enforcement agencies, and criminal activity within two contiguous but economically dissimilar regions of the state. Eighteen counties in Northwestern North Carolina are studied in this project in order to determine what effects on criminal activity may be attributed to various economic characteristics of the communities. Comparisons are also made to determine the regional differences in these relationships.

It should of course be noted at the outset that criminal statistics are the subject of much debate. Crime statistics attract a great deal of attention and are cited as indicators of increasing social disorganization or as measures of the effectiveness of law enforcement and social control organizations such as the Church and schools. No

small amount of concern is directed toward the validity of the currently available measures of the rate of criminal activity.[1] In essence the question is whether these statistics accurately measure the extent of crime in society. These concerns appear to be reasonable since record keeping is a serious problem. In actuality, official crime statistics are a function of several factors including the diligence of police in detecting crime, the adequacy of the recording system in tabulating crime, and the amount of crime itself. All of these factors affect reported crime rates.

According to the Task Force Report of the President's Commission on Law Enforcement and Administration of Justice, there are two directions a researcher can take in attempting to measure the incidence of crime. The first is to determine the degree of public safety, that is, to measure the probability for a person in a certain category being a victim of a crime. A second approach is to determine the extent of criminality within a society, through a measurement of the probability that an individual with specified characteristics will commit a crime. The Report further points out that

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[1]See Leslie T. Wilkins, "New Thinking in Criminal Statistics," Journal of Criminal Law, Criminology, and Police Science, 56:277-284, September, 1965; Martin Gold, "Undetected Delinquent Behavior," Journal of Research in Crime and Delinquency, 13:27-46, January, 1966; Harry M. Shulman, "The Measurement of Crime in the United States," Journal of Criminal Law, Criminology and Police Science, 57:483-492, December, 1966; Marvin E. Wolfgang, "Uniform Crime Reports: A Critical Appraisal," University of Pennsylvania Law Review, 111:708-738, April, 1963.

crime rates should be recognized as being a function of exposure or opportunity. Crime obviously will vary according to the opportunities available for its conduct and this variability may be only slightly related to gross population characteristics of the area. Crime rates of a designated area should be understood as being influenced by the age distribution of the population, by the extent of urbanization, by the ethnic mix in different geographical regions, and by many other demographic factors.[2]

The Report discusses several problems which hamper accurate measurement of crime. A major problem which pervades all measures of crime is the inability to distinguish between changes in the amount of crime committed and the amount of crime reported to authorities. It should be noted that the effectiveness of law enforcement agencies causes the reported crime rate to vary from the actual rate. This is because rising public confidence in the police leads to the reporting of more crimes although the actual crime rate might in fact be on the decline. Even when there is an actual change in the crime rate, it is extremely difficult to separate the results of actions by the criminal justice system from independent social changes.[3]

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[2]Marvin E. Wolfgang, Leonard Savitz, and Norman Johnston (eds.), The Sociology of Crime and Delinquency (2nd ed.; New York: John Wiley and Sons, Inc., 1970), p. 102.

[3]Ibid., p. 103.

A second major problem for the measurement of crime lies in the different types of criminal activity. This is important because the distribution of crimes according to degree of seriousness is an important fact in measuring public safety. To overcome this problem, the Task Force Report discusses a "crime-cost model" for measuring crime. This model, in assessing the performance of the criminal justice system, takes into account the incidence of criminal activity as well as both the dollar and social costs of crime control.[4]

A persistent criticism of reported crime rates is that they may grossly understate the extent of actual criminal activity. The accuracy of such criticisms has been explored and the evidence indicates that apparently underreporting of crime is a significant factor to be considered in assessing the effect of the criminal justice system.

Using a survey approach to determine crime rates rather than relying upon the traditional approach of obtaining data from police records, the National Opinion Research Center (NORC) confirmed that actual crime rates are much higher than previous (reported) figures had indicated. By taking a random sample of American households, NORC researchers found that the number of actual instances

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[4]Ibid., pp. 104-113.

of major crimes was more than double the figures reported by the Uniform Crime Index reported by the Federal Bureau of Investigation.[5]

Aside from their findings about the underreporting of crime, they also found that as one moves from the central city to the suburbs and rural areas crime rates decline, and that the rates more drastically decline for crimes against the person than for property crimes. NORC also reported that the more serious the crime, the more likely it is to be reported to the police. The reasons which were cited for victims not reporting crimes to the police fall into four main categories. The first was that the incident was not perceived as being a police matter, but rather a personal matter involving family members or friends and should be kept private. Another reason was that reporting the incident might generate some form of reprisal. A third reason was that the persons did not want to take the time or were confused as to proper procedure for reporting the incident. Finally, a majority of the non-reporting victims failed to notify the police because of their attitudes of police ineffectiveness. This relates to the tremendous time lag involved as cases proceed from the initial victimization to the trial and sentencing. People in this category tended to believe the police could not do anything about the crime.[6]

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[5]Phillip H. Ennis, "Crime, Victims and the Police," Transaction, IV (June, 1967), p. 38.

[6]Ibid., pp. 40-43.

A recent study was conducted which assessed the accuracy of statistics measuring criminal activity in North Carolina. In 1971, researchers from the Department of Political Science at the University of North Carolina in Chapel Hill ascertained public attitudes toward the activities and policies of the criminal justice system. The study sought to determine if any member of the household had been a victim of any crime and was based on the data obtained from respondents selected by a random sample of households in the state.

The study found that North Carolina citizens perceive crime to be a major problem facing society today. Over half of the sample population was found to be worried that they would themselves experience some form of personal or property victimization. The survey reported a high level of support for the police and it was noted that those persons who have had contact with the police were generally satisfied with that contact. In other words most of the respondents felt that the police were being effective. However, thirty per cent of the sample felt that some groups in the total population do not receive fair treatment from the police and courts.[7]

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[7]"Public Attitudes Toward the Criminal Justice System and Criminal Victimization in North Carolina" (A Study Prepared for the Committee on Law and Order and Agencies of the Criminal Justice System, December 14, 1971).

The study found that one-third of the households included in the sample had been victimized during the previous year. Victimizations against property and victimizations against tranquility, peace and order were most frequent. Fewer than one-third of all victimizations were reported to the law enforcement authorities. Non-reporting in North Carolina seemed mainly to be due to an unfavorable assessment of the costs of reporting compared to the benefits received from such action. According to the data gathered, the police made an arrest in five to ten per cent of all victimizations, and three-fourths of those persons brought to trial for reported victimizations were found guilty.[8]

While it is obvious that many more crimes occur than are ever reported, one is left in a quandry as to what to do about this. It could be possible to weight the reported figures to account for underreporting if accurate survey data were available for each community and for each class of crime in that area. Such data is not available and there are no prospects for its early collection. Most students of this problem hold that, while less than fully satisfactory, the best available data would be that which procedurally are collected most closely to the commission of the crime. Thus it is believed that for criminal research projects police

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[8] Ibid.

statistics are far more preferable to court statistics on convictions or prison statistics on commitments.[9] Recognizing the inherent limitations of such data, this study nonetheless employs police reports on reported criminal activity for want of a better and more precise measure.

Environment and Crime

Several theoretical propositions exist in the literature which seek to explain statistically the relationship between socio-economic environmental conditions and the patterns of criminal activities in selected areas. A brief review of some of these studies points to the presumed effects of income, race and urbanization on criminal behavior in aggregates of individuals.[10] A second strand of the relevant literature focuses on the effect of socio-economic and environmental characteristics on public policy on the state and local

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[9]Marvin E Wolfgang, Crime and Race (New York: Institute of Human Relations Press, 1964), pp. 10-13.

[10]By necessity, only a few articles may be cited from the vast body of literature relating these variables. These studies were chosen since they are representive of the concepts and approaches used in many other studies. On the effect of income on criminal behavior see Albert H. Hobbs, "Relationship Between Criminality and Economic Conditions," Journal of Criminal Law and Criminology, 34:5-10, May, 1943; David Bogen, "Juvenile Delinquency and Economic Trend," American Sociological Review, 9:178-184, April, 1944. On the effect of race on criminal behavior the reader is referred to Irving Spergel, "Male Adult Criminality, Deviant Values and Differential Opportunities in Two Lower Class Negro Neighborhoods," Social Problems, 10:237-250, 1963, Arthur Wood, "Minority-Group Criminality and Cultural Integration," Journal of Criminal Law and Criminology, 37:498-510, March, 1947; Guy Johnson, "The Negro and Crime," Anals of the American Academy of Political and Social Science, 217:93-104, September, 1941.

level in the area of public safety. After a brief review of the literature, this study seeks to test the hypotheses derived from the previous research and attempts to integrate findings about environmental factors, characteristics of the criminal justice system and data on criminal activity in diverse parts of North Carolina.

Several studies have been done which have related economic development and income to criminal behavior. According to Thomas Dye, there is good reason to believe that a certain degree of social disorganization is always associated with economic development.

> "It has been said that economic development involves certain necessary social dislocations: a certain degree of unemployment appears to be inevitable; the transition from rural to urban life creates a multitude of social problems; social isoloation and hostility are frequently by-products of this process; traditional value systems and social control mechanisms are underminded, without their immediate replacement by more relevant values and institutions. All of these conditions are intimately associated with crime. Whether these social dislocations are permanent by-products of economic development or

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[10]On the effect of urbanization see Marshall B. Clinard, "A Cross-cultural Replication of the Relation of Urbanism to Criminal Behavior," American Sociological Review, 25:253-257, April, 1960; Calvin F. Schmid, "Urban Crime Areas," American Sociological Review, 25:527-542, August, 1960; George B. Vold, "Crime in City and Country Areas," Annals of the American Academy of Political and Social Science, 217:38-45, September, 1941. A comprehensive overview of the research in criminal behavior can be found in Edwin H. Sutherland and Donald R. Cressey, Principles of Criminology seventh edition, (Philadelphia: J. B. Lippincott Company, 1966).

> merely an expression of social growing pains, there is still reason to hypothesize that crime itself increases with economic development,"[11]

Dye found that crime rates are positively related to four measures of economic development. However, according to Dye, it is urbanization or the percentage of the total population which lives in urbanized areas that provides the most comprehensive explanation of variations in the crime rates.[12]

In an analysis of the relationship of economic cycles to crime rates, Marcia Guttentag suggests that unemployment is often associated with higher crime rates. However, the relationship is not a direct one. She contends that economic conditions play a direct role in population shifts which are reflected in changes in crime and delinquency rates. She maintains that population shifts create the conditions for the normlessness and anomie which in turn result in a high delinquency rate.[13]

Basing his research on data gathered in Chicago, Belton Fleisher, an economist, constructed a supply and demand model of delinquency to determine the effect of economic conditions on delinquency. He found that if a one per cent rise occurs in income levels in extremely delinquent

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[11]Thomas R. Dye, Politics, Economics, and the Public (Chicago: Rand McNally and Company, 1966), p. 220.

[12]Ibid.

[13]Marcia Guttentag, "The Relationship of Unemployment to Crime and Delinquency," Journal of Social Issues, XXIV (1968), pp. 105-113.

areas, particularly if the increased incomes result from a rise in the earning power of the males, the rate of delinquency may decline by 2.5 per cent. Concerning the effect of unemployment on delinquency, he found that a positive relationship does exist. However, the relationship is not as strong as that for income and appears to operate differently in different areas. He states that there is no evidence that the effect of unemployment is greater in the high delinquency areas than in the low delinquency areas, but that income changes do have a greater effect in high delinquency areas.[14]

Several studies beginning with an article, "Towards an Understanding of Juvenile Delinquency", written in 1954 by Bernard Lander, have debated whether delinquency is fundamentally more related to variables indicative of socio-economic status or to those indicative of anomie. Based on a multivariate analysis of ecological data, Lander concluded that his data supported an anomie theory of juvenile delinquency. However, this was questioned by Gordon who points to the misuse of certain statistics and errors in their use which Lander and others have employed in their studies supporting anomie theory. Furthermore, he suggests that a correct

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[14]Belton M. Fleisher, "The Effect of Income on Delinquency," The American Economic Review, LVI (March, 1966), pp. 118-137.

analysis of Lander's data confirms that there is, in fact, a strong association between delinquency and socio-economic status.[15]

Dye found that while crime rates and prisoner populations are related, the socio-economic characteristic which more closely correlates with prisoner population is education. States with well educated adult populations have lower prisoner populations. Also, he found that increases in crime rates are associated with increases in policy protection, even when the effect of urbanization is controlled. Dye found that there is a significant association between Democratic control of a state government and a higher crime rate. This was true for non-southern state as well as for the eleven southern states.[16]

The effects of race and urbanization on criminal behavior in aggregates of individuals have been examined in several studies. In a study of eight communities, James Q. Wilson found that there were certain community characteristics which correlated with a higher crime rate. The four "high-crime" communities were the same ones with large Negro populations and large percentages of foreign stock. The four "high-crime" communities also were industrial,

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[15]Robert A. Gordon, "Issues in the Ecological Study of Delinquency," American Sociological Review, XXXII (December, 1967), pp. 927-936.

[16]Dye, pp. 228-234.

working-class cities with a median family income that was below the state average and contained a declining downtown business district. The four "low-crime" areas were well-to-do suburban areas with virtually no Black population. The median family income for three of these areas was much higher than for the "high-crime" areas. Wilson also pointed out that the percentage of a city's nonwhite population is strongly correlated with crimes against the person such as murder and assault.[17]

In a discussion of his findings, Wilson suggests that the variance in the crime rates found in the eight communities might be the result of the attitudes and actions of the police, especially the chief, rather than a disparity in the amount of crime actually committed. He stated that the presence of large numbers of Negroes raises the potential problem of unequal police treatment of citizens.[18]

In a study that examines the relationship between race and crime, Edward Green critically analyzes the theory which posits a racial difference in criminal behavior. He suggests that the apparently higher rate of crime for Negroes compared with whites results predominantly from the wider distribution among Negroes of the social class characteristics associated with criminal behavior. His findings show that

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[17]James Q. Wilson, Varieties of Police Behavior (Cambridge: Harvard University Press, 1968), pp. 89-95.

[18]Ibid., p. 96.

the races differ greatly in the distribution of occupational characteristics and geographic mobility, and when these variables are controlled, the arrest rates of the races tend toward parity and in several instances a higher rate actually exists for whites. He concludes that the effect of socio-economic status on arrest rates operates independently of race, and indicates that the following characteristics are positively correlated with disproportionately high arrest rates for both white and Negro: Male; youths, aged seventeen to twenty-four; persons in low income occupations (semi-skilled and unskilled workers); the unemployed; and persons not native to the state.[19]

To effectively compare crime rates between Negroes and whites, Earl Moses suggests that it is first necessary to equate the two races on socio-economic characteristics. His study compares two white and two Negro areas in Baltimore, Maryland which have been matched on the socio-economic characteristics such as home ownership, race, sex, and age groupings. He found that even after matching, crime rates in the two Negro areas were in fact higher than in the two white areas. He discusses several possibilities that might account for his findings. First, it is suggested that the higher Negro rates might have occurred because the matching

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[19]Edward Green, "Race, Social Status, and Criminal Arrest," American Sociological Review, XXXV (April, 1970).

of objective aspects of the areas failed to take into account subjective aspects. Also, he contends that the relatively fixed occupational status of the Negro should be considered in an attempt to explain the higher rates. The white areas consisted of a population of a relatively long residence in the area, while the Negro population was predominantly of recent migration. Moses claims that this, along with other similar conditions among the Negro population is conducive to greater criminality.[20]

As noted above, the effects of industrialization and urbanization on criminal activity have often been studied. As part of a larger study in Illinois of delinquency among juveniles, Clark and Wenninger found that significant differences in the incidence of illegal behavior exist among communities differing in predominant social class composition, within a given metropolitan area. When the rates of juvenile misconduct were compared on individual offenses among communities, the incidence of most offenses varied according to social status. Crime rates become progressively greater as one moved from rural farm, upper-class urban to industrial urban and were greatest in lower-class urban communities. Clark and Wenninger also found that

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[20]Earl R. Moses, "Differentials in Crime Rates Between Negroes and Whites, Based on Comparisons of Four Socio-Economically Equated Areas," American Sociological Review, XII (August, 1947), pp. 411-420.

there were no significant differences in illegal behavior rates among the social classes of rural and small urban areas. However, communities consisting predominantly of lower socio-economic class persons did have higher illegal behavior rates, particularly in the more serious types of offenses.[21]

Karl Christiansen, in an analysis of the relationship between industrialization and urbanization, and the rate of criminality, attempts to shed some light on the factors contributing to the increase in the crime rate. Defining urbanization as a sociological concept, rather than a demographic one, he states that "Urbanization reduces the possibilities of social control, and it is generally assumed that the urbanized citizen will therefore yield more easily to illegal temptations than does his rural counterpart."[22] In comparing crime rates in urban and rural societies in Denmark, Christiansen found that the crime rates in urban areas were much higher than in rural areas. While the crime rate in the rural districts increased more rapidly over a period of sixteen years than did the rate in the urban districts, the differences between the two remained

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[21]John P. Clark and Eugene P. Wenninger, "Socio-Economic Class and Area as Correlates of Illegal Behavior Among Juveniles," Crime in the City, ed. Daniel Glasser (New York: Harper and Row, 1970), pp. 71-90.

[22]Karl O. Christiansen, "Industrialization and Urbanization in Relation to Crime and Juvenile Delinquency," Crime in the City, ed. Daniel Glaser (New York: Harper and Row, 1970), p. 50.

considerable. He stresses two main points in explaining the difference between the crime rate of the rural and urban districts. It was his contention that such differences could be attributed to the degree of isolation and the degree of homogeneity of the population.[23]

In addition to the literature relating social status, race, and urbanization to criminal behavior certain studies in the area of policy analysis are also relevant. Students of state and local politics frequently rely upon a systems model to analyze specific policy areas such as welfare, highways and education.[24]

In a systems analysis of policy a central problem is not only describing variation in policies but, more importantly, explaining these policy differences.[25] The construction of a model which portrays the relationships between policy outcomes and the forces which shape them can aid in the explanation of public policy. A model is an abstraction of complex events in life, and its utility

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[23] Ibid., pp. 47-55.

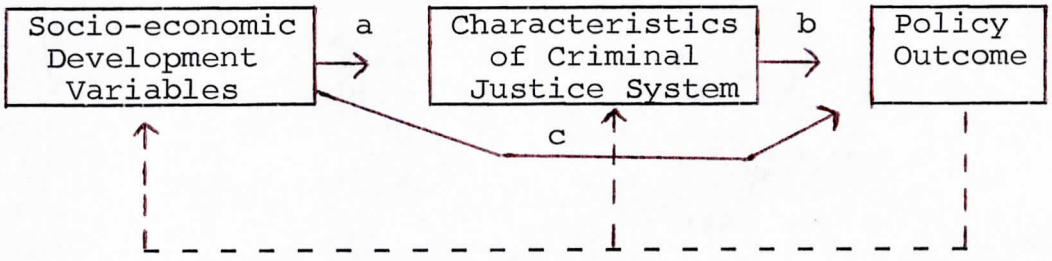
[24] See, for example, Thomas R. Dye, Politics, Economics and the Public (Chicago: Rand McNally, 1966), Richard E. Dawson and James Robinson, "Interparty Competition, Economic Variables, and Welfare Policies in the American States," Journal of Politics, 25 (May, 1963), pp. 265-289, and Ira Sharkansky, Spending in the American States (Chicago: Rand McNally, 1968).

[25] For a comprehensive discussion of the principles of systems analysis in political science see David Easton, A Framework for the Analysis of Politicsl Systems (Englewood Cliffs: Prentice-Hall, 1965). A brief distillation of these ideas is set forth in Dye, op. cit., Chapters 1 and 2.

lies in its ability to simplify politics and social processes. Models are also useful in aiding the design of policy research. Such a model for the criminal justice system might be such as the one set out below in Figure I.

Figure I

A Model for the Analysis of Criminal Justice Systems



Policy outcomes may be thought of being the result of forces brought to bear upon a system which causes it to make particular responses. A model for the explanation of public policy outcomes may describe relationships between socio-economic inputs, system characteristics and policy outcomes. Inputs are received into the system in the form of both demands and supports. In other words, the system and its outputs are affected by the environment (linkages A + B). Any system absorbs a variety of often conflicting demands and, in order to change these demands into outputs, it must arrange settlements. Public policy is formulated through

the political system, but the character of that system may not independently influence policy outcomes. Moreover, because of feedback, policy outcomes have some reciprocal impact on socio-economic conditions and system characteristics. In examining the relationships between socio-economic variables, political system characteristics, and policy outcomes, it is necessary to determine whether or not differences in policy outcomes are independently related to system characteristics.[26] Here the question is whether the outputs are a result of linkage B or linkage C.

In the process of simplifying reality, it is inevitable that a model will fail to reflect all of the complexities of the real world. Simplification requires a reduction in the number of variables relevant to the policy process. Thomas Dye, perhaps the leading scholar in the analysis of public policy on the state level, views economic development--urbanization, industrialization, wealth, and education -- being more influential on policy than system characteristics such as party competition and malapportionment. As such he argues that system outputs are more a result of environmental factors than of system factors.[27] There is considerable

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[26]Dye, pp. 4-5.

[27]Ibid., p. 7.

empirical evidence to justify Dye's selection of economic development as the principal input variable.[28]

From this review of previous research the following propositions are put forth for examination and testing:

1. As communities grow larger, and hence become more urbanized, there will be an increase in the rates of crime experienced by those towns when compared to non-urbanized towns.

2. Communities having increasingly large nonwhite populations will experience higher rates of criminal activity than towns having smaller nonwhite populations.

3. Communities having larger percentages of juveniles will be expected to have higher rates of juvenile crimes than those in which juveniles constitute a smaller portion of the total population.

4. Communities experiencing high rates of population growth and its accompanying social disruption will experience higher crime rates than those which are socially stable and experience little population growth.

5. Communities experiencing high rates of criminal activity will demonstrate higher rates of spending for law enforcement activities than those in which crime is less prevalent.

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[28]See the discussion of economic development by James R. Elliot, "A Comment on Inter-party Competition, Economic Variables, and Welfare Policies in the American States, Journal of Politics, XXVII (1965), pp. 185-191.

Setting for the Study

In order to test the hypotheses outlined above, data on criminal activity and community characteristics were obtained for selected local governmental units within the State of North Carolina. It should be noted that North Carolina is divided into seventeen planning districts for the purpose of regional law enforcement planning. This study deals with two of these units: Region D, the Northwest Planning Council for Crime Deterrence, and Region G, the Piedmont Triad Criminal Justice Planning Unit. The towns and counties included in each Region are listed in Table I.

Region D encompasses seven counties in the mountains of Northwestern North Carolina, bordering Tennessee to the west, and Virginia to the north. The total land area of the region is 2,503 square miles. All of the counties are predominantly rural; Watauga County with 21 per cent of its residents dwelling in urban areas is the most urbanized county in this region. Educational facilities in the area include Appalachian State University which is located in Boone, Wilkes Community College located near Wilkesboro, and Mayland Technical Institute. These centers attract a significant number of young people who relocate in the area. Additionally, the many tourist attractions in the region boost the economy throughout the year, particularly in the winter, when skiers flock to the various slopes located in

TABLE I

COUNTIES AND TOWNS IN REGIONS D AND G

Region D	Region G	
Town or County	Town or County	Town or County
Alleghany County	Alamance County	Graham
Ashe County	Caswell County	Greensboro
Avery County	Davidson County	High Point
Mitchell County	Davie County	Jonesville
Watauga County	Forsythe County	Kernersville
Wilkes County	Guilford County	Lexington
Yancey County	Randolph County	Liberty
Bakersville	Rockingham County	Madison
Banner Elk	Stokes County	Mayodan
Blowing Rock	Surry County	Mebane
Boone	Yadkin County	Mocksville
Burnsville	Asheboro	Mount Airy
North Wilkesboro	Burlington	Pilot Mountain
Sparta	Denton	Ramseur
Spruce Pine	Dobson	Randleman
West Jefferson	East Bend	Reidsville
Wilkesboro	Eden	Stoneville
	Elkin	Thomasville
	Elon College	Winston-Salem
	Gibsonville	Yadkinville

the area. A tourist area such as this experiences unique criminal problems due to the transient nature of many of the persons in the area. The resort character of the area also poses a second problem in that many homes are vacant for long periods of time. Exacerbating these problems is the fact that Region D experienced a large amount of growth in population in the past decade, and in fact some localities experienced a doubling of their populations in this period.

Region G is the state's most populous and largest planning unit with 5,443 square miles. Located in the North Central section of the state, Region G is contiguous to Region D on the west, and borders Virginia on the north. The region is composed of eleven counties, four of which are predominantly urban, five predominantly rural, and two almost equally divided between rural and urban characteristics. The Winston-Salem, Greensboro, High Point Standard Metropolitan Statistical Area is the region's most urban area. Region G has a number of institutions of higher learning. There are four universities, several colleges and technical institutes.

Tobacco, textiles and furniture are major contributors to the economy of the region. However, since 1940, gains in industrial employment have been made in factories requiring considerably higher skilled types of employment. Because of the availability of almost unlimited sites for development, this region has tremendous prospects for continued economic expansion.

As can be seen from TABLE II, Region G has a population approximately eight times larger than Region D. However, the relative change in population over the past decade is greater for Region D. The average size of the towns in Region G is approximately eight times larger than those in Region D. The average percentage of Blacks in the towns in Region G is 12.96%, while in Region D, Blacks account for an average of only 3.2% of the population of the towns. The average age groupings are quite similar for the two regions, the exception being the 16-21-year group which is proportionately larger in Region D. This difference could possible result from Appalachian State University's attracting this age group to the area.

TABLE II

REGIONAL COMPARISON OF POPULATION CHARACTERISTICS OF TOWNS

	Region D	Region G
Total Population	138704	981393
Average Population in Towns	2192.29	17226.51
Average Per Cent Black	3.20	12.96
Average Per Cent Population 0-15 Years	22.70	27.13
Average Per Cent Population 16-21 Years	19.10	11.03
Average Per Cent Population 22-34 Years	15.30	16.58
Average Per Cent Population 35 and Over	42.30	45.13
Average Per Cent Population Change 1960-1970	16.00	14.41

Just as there are economic differences between the regions, there are also differences in the amount of criminal behavior in these areas. Illustrations of these differences by region are set forth in TABLE III which compares the arrests per capita by the sheriff departments.[29]

As may be seen, the greatest regional difference in the arrests per capita is found in the adult misdemeanors. Here, urban Region G exceeds rural Region D by approximately twenty arrests per capita. Turning to total adult arrests per capita we see that Region G also exceeds by twenty arrests per capita the pattern found in Region D. However, concerning adult arrests, as a whole the rate for drug related arrests in Region D is three times greater than for Region G. For most types of juvenile arrests, rural Region D exceeds urban Region G. This is particularly true for juvenile misdemeanors for which the rate in Region D is almost five times greater than for Region G.

These figures are based on the total population of the entire county. It should be further noted that Region G is composed of more urbanized counties than is Region D.

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[29]While these figures are based on official state law enforcement planning reports, some caution is warranted in accepting their accuracy. The data was originally gathered by the regional planning agencies which in turn passed the data on to state authorities. The accuracy of the data at times depended upon the diligence of regional officials in soliciting information from local departments. From personal observation, it is felt that ironically, it was the planning agency in the more rural of the two regions which gathered the information most conscientiously and with greatest accuracy.

TABLE III

REGIONAL DIFFERENCES IN PER CAPITA ARREST DATA--

DATA FROM SHERIFF DEPARTMENTS*

Type of Arrest	Region D (Rural)	Region G (Urban)
Adult Felony	8.1	6.4
Adult Misdemeanor	28.8	49.2
Adult Traffic	52.4	53.8
Adult Total	89.5	109.6
Adult Alcohol Related	31.0	27.9
Adult Drug Related	1.2	0.4
Juvenile Felony	0.05	0.04
Juvenile Misdemeanor	5.1	1.5
Juvenile Traffic	1.3	0.9
Juvenile Total	6.6	2.5
Juvenile Alcohol Related	0.4	0.8
Juvenile Drug Related	0.15	0.04

*Arrest rates per 1,000 persons

Source: North Carolina State Department of Natural and Economic Resources, Division of Law and Order.

In urban areas such as Region G the function of the sheriff departments is more often one of court-related activities such as serving processes and administering the county jails, and in fact it is the local departments which are largely responsible for keeping the peace and maintaining order. Therefore in urban areas, data based on reported activities of sheriff departments, may in fact underreport the extent of crime. For this reason it may be beneficial to examine data based on reported activities of local police departments.

The regional differences may be summarized as follows. According to the reports of local departments which are summarized in TABLE IV, it can be seen that for each type of arrest with the exception of juvenile felonies, rural Region D greatly exceeds urban Region G in per capita arrests. In the case of total juvenile arrests, Region D is twenty times greater than Region G.

Relating Environment and the Criminal Justice System

For the purposes of this study, data on community characteristics including sex, age, race and median income levels of the population for each town and county in Regions G and D were obtained from the 1970 U. S. Census. Selected variables were then correlated with arrest data using both nonparametric and parametric measures of association.

TABLE IV

REGIONAL DIFFERENCES IN PER CAPITA ARREST DATA--DATA FROM LOCAL DEPARTMENTS*

Type of Arrest	Region D	Region G
Adult Felony	19.4	8.9
Adult Misdemeanor	128.1	59.5
Adult Traffic	280.8	101.4
Adult Total	427.4	169.9
Adult Alcohol Related	49.3	28.6
Adult Drug Related	1.9	0.4
Juvenile Felony	1.3	1.3
Juvenile Misdemeanor	24.5	2.4
Juvenile Traffic	74.3	0.9
Juvenile Total	100.2	5.1
Juvenile Alcohol Related	5.8	0.8
Juvenile Drug Related	2.3	0.03

*Arrest rates per 1,000 persons

Source: North Carolina State Department of Natural and Economic Resources, Division of Law and Order.

The arrest data used in this study involved for both adults and juveniles the total number of arrests, the number of felonies, misdemeanors and traffic arrests, as well as those arrests which were alcohol or drug related. The arrest data was obtained from the Division of Law and Order in State Department of Natural and Economic Resources and from the Regional Law Enforcement Planning Agencies located in Greensboro and Boone. Raw data on total arrests by each department was divided by town or county population in order to yield per capita rates of selected crimes. These per capita rates are set out in Appendixes A-D.[30]

Data concerning the law enforcement agencies was also obtained from the planning agencies. Information was gathered concerning the budgets of the departments, the number and average salary of full-time deputies and policemen in each department, and the average educational level and professional training of deputies and police officers in each department.

It is the purpose of this study to test the relationships between socio-economic environment and crime rates in two law enforcement planning regions and to make comparisons

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[30]Because the arrest data from some of the local law enforcement agencies were incomplete it was necessary in certain instances to estimate the number of certain types of arrests for some counties and towns. This estimate was derived from the average per capita rates of crime for each region, since on statistical grounds this estimate would be a closer approximation of the true rate than zero.

of the differences in these relationships in the two regions. The method of testing these relationships will be to construct contingency tables relating the independent socio-economic variables and the dependent arrest variables.

For the purposes of this study, towns are classified as being in the "low" category if they scored below the mean or average on a particular trait. Conversely, towns are placed in the "high" category if they score above the group mean on a particular trait. For example, since the mean rate of population change of towns in Regions D and G is 15.23 per cent then all towns having rates of growth above 15.23 per cent are scored in the high category. This procedure is repeated in classifying other variables, and two-by-two contingency tables are constructed illustrating these bivariate relationships.

The method by which the relationships will be tested is through the use of the statistic, Yule's Q. Yule's Q is a one-way measure of association having the formula

$$Q = \frac{ad - bc}{ad + bc}$$

which may be used in predicting categories of a dependent variable based on categories of an independent variable.[31]

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[31]The statistic Q is based on the formula $Q = \frac{ad-bc}{ad+bc}$ where a 2 X 2 contingency table is constructed as follows:

	trait I	trait II
Group A	a	b
Group B	c	d

Like other measures of association, Q has a range between -1.00 and 1.00. Its absolute value increases as two variables are more closely related; its sign indicates the direction of this relationship.

Since the towns included in this study comprise the universe of towns in Region D and G, a significance test is inappropriate. No claim is made that Regions D and G are typical of the entire state or of localities in general. They were not selected by any random method. Therefore, significance tests, which are based on chance selection, would be inappropriate.

Socio-economic Environment and Crime Rates

TABLE V examines the relationship between total population and four types of crime rates for all towns in the two regions. When attention is directed to adult crime rates as in sections A and B, it can be seen that there is a moderately strong relationship between total population and adult crimes. There is no apparent difference between adult

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[31] and where letters a, b, c, and d refer to the cell frequencies or number of cases in each category. Q has a peculiarity that it will have an absolute value of 1.00 whenever any one of the cells is empty. In this study when this situation arises, an alternative statistic, phi, is used. This statistic may be interpreted in the same way as Q. It, however, has a quirk of underrepresenting the strength of a relationship when the marginals are unequal. Therefore, it is a rather conservative associational measure. See Lee Anderson et al, Legislative Roll Call Analysis (Evanston: Northwestern University Press, 1966), pp. 50-53, and G. David Garson, Handbook of Political Science Methods (Boston: Holbrook Press, 1971), pp. 155-156.

TABLE V

THE RELATIONSHIPS BETWEEN TOTAL POPULATION AND FELONY AND MISDEMEANOR RATES FOR ADULTS AND JUVENILES IN 39 TOWNS

		A-Adult Felony		B-Adult Misdemeanor		C-Juvenile Felony		D-Juvenile Misdemeanor	
		Low	High	Low	High	Low	High	Low	High
Total Population	Low	22	9	22	9	17	14	25	6
	High	4	4	4	4	3	5	7	1
		Q = .42		Q = .42		Q = .10		Q = -.25	

felony and misdemeanor rates and their relationship to total population in these communities. Apparently if urbanization is defined as total population, there is in fact support for the proposition that as urbanization increases there is a concomitant increase in adult crime rates. For juvenile rates the pattern is somewhat different. There is a low positive relationship between total population and juvenile felony rates, but the relationship is inverse between population and juvenile misdemeanors. What this means is that smaller towns in fact had higher rates per capita for juvenile misdemeanors than did larger towns.

The relationships between population change and four types of crime rates for all towns is examined in TABLE VI. By looking at section A, it can be seen that a very weak positive relationship exists between population change and per capita adult felony rates. However, for adult misdemeanors and population change, there is a moderately strong inverse relationship. In other words, as the per cent of population change increased, a decrease in adult misdemeanors was observed. Turning to section C, one finds a weak inverse relationship between population change and juvenile felony rates. However, the relationship between population change and juvenile misdemeanor rates is, by contrast, positive in direction and fairly strong.

TABLE VI

THE RELATIONSHIPS BETWEEN RELATIVE POPULATION CHANGE AND FELONY AND MISDEMEANOR RATES FOR ADULTS AND JUVENILES IN 39 TOWNS

% Population Change	A-Adult Felony		B-Adult Misdemeanor		C-Juvenile Felony		D-Juvenile Misdemeanor	
	Low	High	Low	High	Low	High	Low	High
Low	17	9	16	10	14	12	23	3
High	8	5	10	3	7	6	9	4
	Q = .08		Q = -.35		Q = -.14		Q = .55	

TABLE VII examines the associations between the sizes of two population age groupings and the felony and misdemeanor rates for adults and juveniles. Sections A and B relate the young adult population and rates of adult felonies and misdemeanors. In each instance there is a positive relationship of moderate strength. In other words, as there was an increase in the proportion of the total population which was classified as "young adult" an increase occurred in adult arrest rates. Juvenile population size and juvenile arrest rates are related in sections C and D. In the thirty-nine towns, increases in the proportion of citizens under 16 was associated with increases in the juvenile felony rate ($Q = .53$) and with decreases in the juvenile misdemeanor rates ($Q = -.38$).

It was hypothesized that as nonwhite population increases, there will be a corresponding increase in per capita crime rates. TABLE VIII examines the relationships between nonwhite population percentages and four types of crime rates in all towns. By looking at sections A and B, it can be seen that there is a nearly negligible positive relationship between nonwhite population and adult crimes. There is no apparent difference between adult and misdemeanor rates and their relationship to nonwhite population in these communities; in neither case is the relationship very strong. The proposition that as percentage of nonwhite population increases

TABLE VII

THE RELATIONSHIPS BETWEEN PERCENTAGE OF POPULATION IN SELECTED AGE GROUPINGS AND FELONY AND MISDEMEANOR RATES FOR ADULTS AND JUVENILES IN 39 TOWNS

% Population 16-21		A-Adult Felony		B-Adult Misdemeanor		% Population 0-15	C-Juvenile Felony		D-Juvenile Misdemeanor	
		Low	High	Low	High		Low	High	Low	High
	Low	24	11	25	10		9	3	8	3
	High	2	2	2	2		13	14	24	4
		Q = .37		Q = .43			Q = .53		Q = -.38	

TABLE VIII

THE RELATIONSHIPS BETWEEN PERCENTAGE OF NONWHITE POPULATION AND FELONY AND MISDEMEANOR RATES FOR ADULTS AND JUVENILES IN 39 TOWNS

% Nonwhite Population	A-Adult Felony		B-Adult Misdemeanor		C-Juvenile Felony		D-Juvenile Misdemeanor	
	Low	High	Low	High	Low	High	Low	High
Low	15	7	15	7	11	10	16	6
High	11	6	11	6	9	9	16	1
	Q = .08		Q = .08		Q = .05		Q = -.71	

there is a corresponding increase in adult crime rates is hardly supported by this data. With respect to juvenile crime rates, there is also a very weak positive relationship between nonwhite population and juvenile felony rates. However, a strong inverse relationship does appear between juvenile misdemeanor rates and nonwhite population. In other words, as the percentage of nonwhite population increased, there was a concomitant decrease in the juvenile misdemeanor rates. Overall, it appears that for the thirty-nine towns included in this study, the purported relationship between percentage of nonwhite population and juvenile misdemeanor rates was not supported.

TABLE IX examines the relationship between per capita police expenditures and crime rates for all towns in Regions D and G. Turning to sections A and B, it can be seen that a weak positive relationship exists between adult crime rates and police expenditures. There appears to be no difference in adult felony and misdemeanor rates and their relationship to police expenditures in these communities. For juvenile crime rates, a moderate relationship exists between felony rates and police expenditure. This relationship suggests that more money is directed to law enforcement activities in communities with higher juvenile felony rates. A positive relationship also exists between juvenile misdemeanor rates and police expenditure. The positive relationships observed

TABLE IX

THE RELATIONSHIPS BETWEEN PER CAPITA POLICE EXPENDITURE AND FELONY AND MISDEMEANOR RATES FOR ADULTS AND JUVENILES IN 39 TOWNS

Police Expenditure	A-Adult Felony		B-Adult Misdemeanor		C-Juvenile Felony		D-Juvenile Misdemeanor	
	Low	High	Low	High	Low	High	Low	High
Low	16	7	16	7	14	10	20	4
High	10	6	10	6	6	9	12	3
	Q = .16		Q = .16		Q = .35		Q = .11	

above for the four types of crime indicate that communities with a high crime rate spend more money for law enforcement than do communities with low crime rates.

Regional Differences in the Relationships of Environment, System and Criminal Behavior

The preceding section focused on the relationships between environmental factors and criminal arrest rates for thirty-nine towns in Law Enforcement Planning Regions D and G. In this section, the regions are separately analyzed to see if the general patterns which were found earlier, manifest themselves in the different regions. The question that is being asked here is whether the two regions respond differently to the same environmental factors.

Turning to total population and its relationship to arrest data, the two regions evidence different relationships. This data is set forth in TABLE X. When the thirty-nine towns were examined together, there was a positive linear relationship between total population and adult arrest rates. However, in Region D which is relatively rural in nature, adult felony rates appear to decrease as population increases. The reverse is true in Region G which is relatively more urbanized. Adult misdemeanor rates evidence no such difference; in each region, as population increases adult misdemeanor rates also increase. The regional differences in juvenile arrest rates are notable in all thirty-nine towns. Juvenile felony

TABLE X

REGIONAL DIFFERENCES IN THE RELATIONSHIPS BETWEEN TOTAL POPULATION AND FELONY AND MISDEMEANOR RATES FOR ADULTS AND JUVENILES

		A-Adult Felony		B-Adult Misdemeanor		C-Juvenile Felony		D-Juvenile Misdemeanor	
		Low	High	Low	High	Low	High	Low	High
REGION D Total Population	Low	3	4	4	3	4	3	3	4
	High	3	0	1	2	3	0	3	0
		Ø = -.53		Q = .45		Ø = -.43		Ø = -.53	
REGION G Total Population	Low	16	9	14	11	17	8	19	6
	High	0	4	0	4	1	3	1	3
		Ø = .44		Ø = .39		Q = .73		Q = .81	

rates were only very weakly related to total population (Q = .10) while juvenile misdemeanor rates was negatively related to total population (Q = -.25). In Region D (largely rural), both juvenile felony and juvenile misdemeanor rates and population are inversely related. These relationships are fairly strong; both decline as town population increases. The relatively more urbanized Region G evidences a contrary pattern; as population increases there is a corresponding increase in the per capita rates of juvenile felonies and juvenile misdemeanors.

The regional differences in the relationships between population change and town crime rates are also notable. TABLE XI controls for regional differences and focuses on the relationships between felony and misdemeanor rates for juveniles and adults. In the thirty-nine towns examined it was earlier found that a nearly negligible relationship existed between population change and adult felony rates (Q = .08). However section A of TABLE XI shows that opposite trends exist for the two regions. In rural Region D population growth is associated with higher adult felony rates; in urbanized Region G, it is population loss which is related to higher adult felony rates. Adult misdemeanor rates also evidence a regional difference. While the relationship to population change for all towns was inverse (Q = -.35) in Region D there is no relationship to population change,

TABLE XI

REGIONAL DIFFERENCES IN THE RELATIONSHIPS BETWEEN RELATIVE POPULATION CHANGE AND FELONY AND MISDEMEANOR RATES FOR ADULTS AND JUVENILES

		A-Adult Felony		B-Adult Misdemeanor		C-Juvenile Felony		D-Juvenile Misdemeanor	
		Low	High	Low	High	Low	High	Low	High
REGION D % Population Change	Low	4	2	3	3	3	2	3	2
	High	2	2	2	2	4	1	3	2
		Q = .33		Q = 0		Q = -.45		Q = 0	
REGION G % Population Change	Low	9	11	11	9	12	8	12	8
	High	7	2	3	6	6	3	8	1
		Q = -.62		Q = .42		Q = -.14		Q = -.68	

in Region G there is a linear increase in adult felony rates which occurs with population growth. With respect to juvenile misdemeanor rates, population change in Region D has no effect, while in Region G growth in population is accompanied by lower juvenile misdemeanor rates. In both regions population growth is associated with lower juvenile felony rates.

TABLE XII examines regional differences in the associations between the proportions of young adult population and felony and misdemeanor rates for adults. It also includes regional differences in the relationships of the proportion of the population which is comprised of juveniles and juvenile felony and misdemeanor rates. In all thirty-nine towns it was found that an increase in young adult population was associated with increases in adult felony and adult misdemeanor rates (respectively Q = .37 and Q = .43). For adult arrests in the separate regions this pattern of increasing proportions of young adults being associated with increased adult crime rates holds true. The exception is that in rural Region D there is no relationship between increasing percentages of young adult populations and adult misdemeanor rates. Juvenile rates in the separate regions behave as they did when the regions were combined. Increase in the percentage of juveniles in the total population is

TABLE XII

REGIONAL DIFFERENCES IN THE RELATIONSHIPS BETWEEN PERCENTAGES OF TOWN POPULATIONS IN SELECTED AGE GROUPINGS AND FELONY AND MISDEMEANOR RATES FOR ADULTS AND JUVENILES

			A-Adult Felony		B-Adult Misdemeanor			C-Juvenile Felony		D-Juvenile Misdemeanor	
			Low	High	Low	High		Low	High	Low	High
REGION D	% Population 16 to 21	Low	5	3	4	4	% Pop. 0-15	2	0	1	1
		High	1	1	1	1		5	3	5	3
			Q = .25		Q = 0			Ø = .33		Q = -.25	
REGION G	% Population 16 to 21	Low	15	11	14	12	% Pop. 0-15	12	2	7	7
		High	1	2	0	3		11	4	9	6
			Q = .46		Ø = .33			Q = .37		Q = -.20	

associated with increased juvenile felony rates and with decreased juvenile misdemeanor rates.

TABLE XIII compares Regions D and G on the relationships between nonwhite population and four types of crimes. Earlier it was found that the relationships between the proportion of nonwhite population and adult arrest rates were very weak. However this is due to the fact that the regions evidence differing relationships of arrests to nonwhite population. In rural Region D, a larger proportion of nonwhite persons is associated with lower adult felony rates ($Q = -.20$) while in Region G as the proportion of nonwhite persons increase there is an increase in adult felonies. In each region, increases in the percentage of nonwhite are related with increases in the adult misdemeanor rate. While nonwhite population percentage was not found in TABLE VIII to be related to juvenile felony rates, section C shows a significant difference between the regions. In Region D (rural), increases in nonwhite population percentages are related to lower juvenile felony rates while in (urban) Region G such an increase in nonwhite population is related to increased juvenile felony rates. There is a moderately strong relationship of increased percentages of nonwhites being related to lower juvenile misdemeanor rates. In Region G there is virtually no relationship between the variables.

TABLE XIII

REGIONAL DIFFERENCES IN THE RELATIONSHIPS BETWEEN NONWHITE POPULATION AND FELONY AND MISDEMEANOR RATES FOR ADULTS AND JUVENILES

		A-Adult Felony		B-Adult Misdemeanor		C-Juvenile Felony		D-Juvenile Misdemeanor	
		Low	High	Low	High	Low	High	Low	High
REGION D % Nonwhite Population	Low	4	3	4	3	4	3	3	4
	High	2	1	1	2	3	0	3	0
		Q = -.20		Q = .45		ø = -.43		ø = -.53	
REGION G % Nonwhite Population	Low	12	6	10	8	16	5	13	6
	High	4	7	4	7	2	6	7	3
		Q = .56		Q = .37		Q = .81		Q = -.04	

Finally, TABLE XIV sets forth regional differences in the relationships of police expenditures and crime rates. Earlier it was shown that weak to moderately strong relationships existed between the four crime rates and increased per capita police expenditures. When attention is directed toward section A, a regional difference can be observed. In Region D, it appears that as the amount of police expenditure in a community increases, the adult felony rate decreases; in Region G, a contrary pattern can be seen. There appears to exist a very strong relationship between police expenditure and adult misdemeanors in Region D, and in Region G the two variables are positively related, but the association is a weak one. Differences are also evidenced in juvenile crime rates. As can be seen in section C, Region D seems to experience a similar inverse relationship for juvenile felonies that was found for adult felonies in Region D. In Region G juvenile felonies, like adult felonies, seem to be related in a manner opposite to that found in Region D. This suggests that in rural Region D, communities which spend more money for law enforcement experience a relatively lower rate of both adult and juvenile felonies. However in Region G, a more urbanized area, the data seems to indicate that higher adult and juvenile felony rates make increased spending necessary. In Region D there appears to be no relationship between juvenile misdemeanor rates and per capita police expenditures.

TABLE XIV

REGIONAL DIFFERENCES IN THE RELATIONSHIPS BETWEEN POLICE EXPENDITURE AND FELONY AND MISDEMEANOR RATES FOR ADULTS AND JUVENILES

		A-Adult Felony		B-Adult Misdemeanor		C-Juvenile Felony		D-Juvenile Misdemeanor	
		Low	High	Low	High	Low	High	Low	High
REGION D Police Expenditure	Low	2	3	4	2	3	2	3	2
	High	4	1	1	4	4	1	3	2
		Q = -.71		Q = .88		Q = -.45		Q = 0	
REGION G Police Expenditure	Low	14	8	11	11	16	6	17	5
	High	2	5	3	4	2	5	3	4
		Q = .63		Q = .14		Q = .74		Q = .64	

Discussion

This study focuses upon selected areas within North Carolina in an attempt to establish the relationship between various community characteristics, data on the area law enforcement agencies, and criminal activity in two law enforcement planning regions in the state. The two regions were also compared to determine the regional differences in these relationships.

Previous research has found that certain community characteristics are related to criminal activity. Several studies have found that measures of economic development of a community, particularly the degree of urbanization, have been associated with variations in crime rates. According to most research the most urban communities are more likely to experience higher crime rates than rural communities. Race is another characteristic which has been found to be related to criminal activity. Communities with high percentages of non-white populations are expected to experience more crime per capita than predominantly white communities. Much work has been done to determine why this relationship occurs. Edward Green suggests that the higher crime rates for Negroes compared with whites results from the wider distribution among Negroes of social class characteristics associated with criminal behavior.[32]

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[32]Green, pp. 470-490.

This study examined propositions derived from previous research. It was hypothesized that a positive relationship would be found between the degree of urbanization of a community and higher crime rates. A similar hypothesis was also tested purporting that communities experiencing a higher percentage of population change, which is accompanied by social disruption, would have higher crime rates. Racial differences in criminal activity were also tested in that communities with larger nonwhite populations were expected to experience higher crime rates.

To test these hypotheses, contingency tables relating the independent socio-economic variables and the dependent arrest variables were constructed. Yule's Q, a one-way measure of association, was used to test the relationships. Since the towns included in this study comprise the universe of towns in Region G and D, a test for significance would be inappropriate.

This study found that a moderately strong relationship exists between total population and adult crime rates. As urbanization increases, there is a concomitant increase in adult crime rates. However, the data in this study did not support the hypothesis that population change is positively associated with rises in crime rates. On the contrary, it was found that in three of the four types of crime examined, an inverse relationship existed.

It was hypothesized that as nonwhite population increases, there will be a corresponding increase in per capita

crime rates. However, this study found that only a weak positive relationship existed between these variables, and there was a strong inverse relationship between juvenile misdemeanor rates and nonwhite population.

This study also compared two law enforcement planning regions, Region D, which is rural in nature, and Region G, which is predominantly urban. It was hypothesized that urban Region G would experience more crime per capita than would rural Region D. It was found for most types of arrests, Region D greatly exceeded Region G in per capita arrests.

The two regions were also compared to determine if they responded differently to the same environmental factors. Regional differences in the relationships to several environmental factors were found. In Region D, as total population increased, the crime rates decreased; in Region G, as total population increased, the crime rates also increased. Concerning population change, it was found that opposite trends existed for the two regions. In Region D, population growth was associated with higher adult felony rates, while in Region G, it was population loss which was associated with higher adult felony rates.

Regional differences were found in the relationship of per cent of nonwhite population and crime rates. In rural Region D, as the percentage of nonwhite population increased, crime rates decreased; in urban Region G, as percentage of nonwhite population increased, crime rates also increased.

Finally, regional differences in the relationships of police expenditures and crime rates were observed. In Region D, as the amount of police expenditure increased, the adult felony rate decreased. However, in Region G, a contrary pattern was found.

It should again be pointed out that there is some question as to the accuracy of the arrest data used in this study. While the data used here is official arrest data obtained from local law enforcement departments, there is some reason to believe that the reported crime rates in Region D are closer to the actual crime rate than in Region G, and that the actual crime rate in Region G is higher than the reported rates indicate. This is due to differences in the record-keeping systems in the regions. In Region D, the Law Enforcement Planning Director has assisted the local departments in developing uniform crime-recording systems and most of the local departments have adopted this method of record-keeping. In Region G, while the larger departments appear to keep accurate records, much work needs to be done in developing accurate record-keeping in the smaller law enforcement agencies.

APPENDIX A

ADULT ARREST DATA, BY TOWNS, PER THOUSAND PERSONS

REGION D

Town in Region D	Felonies	Misdemeanors	Traffic	Total	Alcohol Related	Drug Related
Sparta (1304)	30.6	76.6	460.1	567.4	45.2	1.5
West Jefferson (889)	11.2	224.9	337.4	573.6	156.3	1.1
Banner Elk (754)	33.1	198.9	265.2	497.3	26.5	3.9
Bakersville (409)	4.8	0	183.3	188.2	19.5	0
Spruce Pine (2333)	12.8	131.5	214.3	358.7	54.0	2.1
Blowing Rock (801)	24.9	124.8	624.2	774.0	37.4	6.2
Boone (8754)	6.8	22.8	228.4	258.1	3.4	0.5
North Wilkesboro (3357)	17.8	238.3	134.0	390.2	29.7	1.7
Wilkesboro (1974)	15.1	151.9	212.6	369.8	10.1	1.5
Burnsville (1348)	37.0	111.2	148.3	296.7	111.2	1.4
Regional Mean	19.4	128.1	280.8	427.4	49.3	1.9
Combined Regional Mean	11.6	77.1				

Note: Parenthetical figures following town names are 1970 populations.
Combined regional means are derived from data for both Regions D and G.

APPENDIX B

JUVENILE ARREST DATA, BY TOWNS, PER THOUSAND PERSONS

REGION D

Town in Region D	Felonies	Misdemeanors	Traffic	Total	Alcohol Related	Drug Related
Sparta (1304)	3.0	38.3	230.0	271.4	15.3	0
West Jefferson (339)	0	56.2	112.4	168.7	3.3	3.3
Banner Elk (754)	0	66.3	132.6	198.9	13.2	6.6
Bakersville (409)	4.8	0	0	4.8	0	0
Spruce Pine (2333)	0	1.2	0	1.2	0	0
Blowing Rock (801)	4.9	37.4	187.2	229.7	12.4	12.4
Boone (8754)	0	0.2	0	0.2	0	0
North Wilkesboro (3357)	0.2	2.9	29.7	33.0	0.2	1.1
Wilkesboro (1974)	0.5	20.2	50.6	71.4	2.5	0
Burnsville (1348)	0	22.2	0	22.2	11.1	0
Regional Mean	1.3	24.5	74.3	100.2	5.8	2.3
Combined Regional Mean	1.3	8.1				

Note: Parenthetical figures following town names are 1970 populations.
Combined regional means are derived from data for both Regions D and G.

APPENDIX C

ADULT ARREST DATA, BY TOWNS, PER THOUSAND PERSONS

REGION G

Town in Region G	Felonies	Misdemeanors	Traffic	Total	Alcohol Related	Drug Related
Burlington (35930)	12.5	67.0	111.1	190.7	44.5	1.2
Elon College (2150)	8.3	65.1	69.3	142.7	27.9	0.4
Graham (7812)	8.7	68.3	153.9	231.0	22.4	0
Mebane (2433)	12.7	1.2	41.1	55.0	27.9	0.4
Denton (1017)	7.8	64.8	69.8	142.5	27.5	0
Lexington (17205)	14.3	81.1	29.8	125.3	32.7	0
Thomasville (15230)	3.5	52.6	49.2	105.4	27.9	0.4
Mocksville (2529)	8.3	65.2	69.1	142.7	44.5	0.4
Kernersville (4815)	0.4	11.6	5.8	17.8	27.8	0.4
Winston-Salem (132913)	14.5	64.6	151.7	230.7	23.2	0.6
Gibsonville (2019)	8.4	65.2	69.4	142.8	27.7	0.4
Greensboro (144076)	17.2	80.5	169.6	267.3	31.0	1.1
High Point (62204)	11.3	102.7	735.1	849.2	54.1	0.4
Asheboro (10797)	0.5	165.9	177.6	344.1	0.6	0
Liberty (2167)	6.9	69.2	95.5	171.6	0.4	0.4
Ramseur (1328)	11.2	24.0	16.5	51.9	20.3	0
Randleman (2312)	4.7	124.5	44.5	173.8	69.6	0
Eden (15871)	9.9	100.6	54.0	164.6	4.6	0.4
Madison (2018)	14.8	47.0	118.9	180.8	28.2	0.4
Mayodan (2875)	3.4	57.3	40.0	100.8	27.8	0.4
Reidsville (13636)	11.0	56.7	58.6	126.4	35.9	0.5
Stoneville (1030)	4.8	53.3	114.5	172.8	38.8	0
Dobson (933)	7.5	65.3	69.9	142.5	27.8	0
Elkin (2899)	9.6	36.9	90.3	136.9	22.0	0
Mount Airy (7325)	14.6	46.4	47.7	108.8	27.9	0.4
Pilot Mt. (1219)	9.8	26.2	74.6	109.1	29.5	0.8
East Bend (485)	8.2	10.3	82.4	101.0	28.8	0
Jonesville (1659)	7.8	19.8	62.6	90.4	27.7	0.6
Yadkinville (2232)	8.0	32.2	69.4	109.7	21.5	2.6
Regional Mean	8.9	59.5	101.4	169.9	28.6	0.4
Combined Regional Mean	11.6	77.1				

Note: Parenthetical figures following town names are 1970 populations.

Combined regional means are derived from data for both Regions D and G.

APPENDIX D

JUVENILE ARREST DATA, BY TOWNS, PER THOUSAND PERSONS

REGION G

Town in Region G	Felonies	Misdemeanors	Traffic	Total	Alcohol Related	Drug Related
Burlington (35930)	1.2	2.5	0.8	4.6	0.6	0.05
Elon College (2150)	1.3	2.3	0.9	4.6	0.9	0
Graham (7812)	0	2.5	0	2.5	0.3	0
Mebane (2433)	1.2	2.4	0.8	4.5	0.8	0
Denton (1017)	0.9	1.9	0.9	3.9	0.9	0
Lexington (17205)	1.2	2.4	0.9	4.7	0.8	0
Thomasville (15230)	1.3	2.4	0.9	4.7	0.8	0
Mocksville (2529)	1.3	2.3	0.9	4.7	0.7	0
Kernersville (4815)	0.2	0.2	0.9	4.7	0.8	0
Winston-Salem (132913)	2.6	1.9	1.0	5.6	0.8	0.2
Gibsonville (2019)	1.3	2.3	0.9	4.6	0.9	0
Greensboro (144076)	1.4	8.1	7.9	17.4	2.9	0.2
High Point (62204)	2.2	4.8	0.9	7.0	0.1	0.2
Asheboro (10797)	0	1.3	0	1.3	0.9	0.2
Liberty (2167)	1.3	2.3	0.9	4.6	0.9	0
Ramseur (1328)	1.3	2.3	0.9	4.6	0.7	0
Randleman (2312)	1.2	2.3	0.9	4.6	0.8	0
Eden (15871)	1.2	2.3	0.9	4.6	0	0
Madison (2018)	1.3	2.3	0.9	4.6	0.9	0
Mayodan (2875)	1.3	1.2	0.9	4.6	0.7	0
Reidsville (13636)	1.4	4.4	0.7	6.6	0.1	0
Stoneville (1030)	0	0	0	0	0	0
Dobson (933)	1.3	2.3	0.9	4.6	1.0	0
Elkin (2899)	4.8	4.1	0	8.9	0.3	0
Mount Airy (7325)	3.9	3.1	0.2	7.3	3.8	0
Pilot Mt. (1219)	0	2.4	0.9	4.6	0.8	0
East Bend (485)	0	2.3	0	4.6	0	0
Jonesville (1659)	1.3	2.3	0.9	4.8	0.6	0
Yadkinville (2232)	0.4	0	0	0.4	0.4	0
Regional Mean	1.3	2.4	0.9	5.1	0.8	0.03
Combined Regional Mean	1.3	8.1				

Note: Parenthetical figures following town names are 1970 populations.

Combined regional means are derived from data for both Regions D and G.

APPENDIX E

PER CAPITA POLICE EXPENDITURES FOR TOWNS IN REGION D

Town	Population	Police Budget	Expenditure Per Capita
Sparta	1304	$ 23,190	$17.78
West Jefferson	889	33,344	37.50
Banner Elk	754	15,000	19.89
Bakersville	409	6,310	15.43
Spruce Pine	2333	47,950	20.55
Blowing Rock	801	53,978	67.38
Boone	8754	104,500	11.94
North Wilkesboro	3357	104,500	31.13
Wilkesboro	1974	40,000	20.26
Burnsville	1348	15,000	11.13

mean= 25.29

APPENDIX F

PER CAPITA EXPENDITURES FOR TOWNS IN REGION G

Town	Population	Police Budget	Expenditure Per Capita
Burlington	35930	$ 877,668	$24.43
Elon College	2150	21,800	10.14
Graham	7812	127,540	16.33
Mebane	2433	52,724	21.67
Lexington	17205	380,000	22.09
Thomasville	15230	307,948	20.22
Mocksville	2529	38,000	15.05
Kernersville	4815	66,974	13.91
Winston-Salem	132913	2,975,438	22.39
Gibsonville	2019	27,650	13.69
Greensboro	144076	4,554,635	31.61
High Point	62204	1,738,335	27.94
Asheboro	10797	305,780	28.32
Liberty	2167	35,668	16.46
Ramseur	1328	27,550	20.74
Randleman	2312	48,912	21.15
Eden	15871	299,610	18.88
Madison	2018	103,000	51.04
Mayodan	2875	43,328	15.07
Reidsville	13636	415,565	30.47
Denton	1017	30,892	30.37
Stoneville	1030	23,742	23.05
Dobson	933	NA	
Elkin	2899	89,087	30.73
Mt. Airy	7325	NA	
Pilot Mt.	1219	28,900	23.71
East Bend	485	5,000	10.31
Jonesville	1659	7,500	4.52
Yadkinville	2232	15,247	6.83

mean= 21.15

APPENDIX G

CORRELATIONS USING YULE'S Q OF ENVIRONMENTAL FACTORS AND FOUR TYPES OF ARREST RATES

Relationships	39 Towns	Region D	Region G
Total Pop. -- Adult Felony	.42	-.53	.44
Total Pop. -- Adult Misdemeanor	.42	.45	.39
Total Pop. -- Juvenile Felony	.10	-.43	.73
Total Pop. -- Juvenile Misdemeanor	-.25	-.53	.81
% Pop. Change -- Adult Felony	.08	.33	-.62
% Pop. Change--Adult Misdemeanor	-.35	0	.42
% Pop. Change--Juvenile Felony	-.14	-.45	-.14
% Pop. Change--Juvenile Misde.	.55	0	-.68
% Black -- Adult Felony	.08	-.20	.56
% Black -- Adult Misdemeanor	.08	.45	.37
% Black -- Juvenile Felony	.05	-.43	.81
% Black -- Juvenile Misdemeanor	-.71	-.53	-.04
% Pop. 16-21 -- Adult Felony	.37	.25	.46
% Pop. 16-21 -- Adult Misdemeanor	.43	0	.33
% Pop. 16-21 -- Juvenile Felony	.06	-.33	.58
% Pop. 16-21--Juvenile Misdemeanor	.71	.25	.06
Police Exp. -- Adult Felony	.16	-.71	.63
Police Exp.--Adult Misdemeanor	.16	.88	.14
Police Exp. -- Juvenile Felony	.35	-.45	.74
Police Exp.--Juvenile Misdemeanor	.11	0	.64

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